

ABSTRACT OF THE DISCLOSURE

The present invention relates to a new and environmentally sound process for the manufacturing of a chemical pulp from lignocellulosic material with an integrated recovery system for recovery of pulping chemicals. The process is carried out in several stages involving a pre-treatment stage followed by one or more delignification stages using an alkaline buffer solution comprising alkali metaborate and sodium carbonate as major components. The alkaline components of the pulping liquor are recovered from a chemicals recovery furnace and at least a portion of the alkali is recycled and used for delignification without any prior reactions with lime or calcium compounds for generation of alkali hydroxide. A quinone based delignification catalyst may be added to be present during delignification.